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COMPLEXITY OF DISTRACTION AND MESSAGE/TASK
AS THEY RELATE TO
PERSUASION AND INTELLECTUAL TASK PERFORMANCE

BY

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B.A., University of Central Florida, 1978

THESIS

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DEDICATION

To my wife, Donna, and my son, Patrick, whose love, companionship, guidance and understanding has been a major influence in my life. The time and effort this thesis required represents merely a fraction of my sincere appreciation to them for what I am becoming today.

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Introduction

Distraction has become an unavoidable phenomenon in today's society. Attempts to cope with or adapt to distraction exist everywhere. For years, experimental researchers have been observing this phenomenon in an effort to minimize its deleterious effects and maximize its beneficial ones.

There have been two primary directions of this research. First, distraction has been examined for its effects on persuasive communication and attitude change. This has been the primary area of emphasis in distraction research. Second, and perhaps more pragmatic, is the effect of distraction on the performance of intellectual tasks. This investigation will attempt to synthesize some of the results from these two areas of research and examine some effects of distraction on both persuasion and task performance.

Persuasive Communication

A fundamental element of attitude change is the reception of information. Since external interference might inhibit processing of the information, it seems probable that such interference would inhibit attitude change. There was a dramatic surge of interest in distraction research when experimental results

were contrary to this assumption. In a classic experiment, Allyn and Festinger (1961) were measuring the effectiveness of forewarning subjects of impending persuasive messages. They hypothesized that subjects would create defenses prior to the message and have less attitude change than those not being forewarned. The results appeared to support their prediction. The control group had significantly greater attitude change than did the treatment (forewarned) group.

Festinger and Macoby (1964) offered an alternative explanation for these findings. The control subjects were instructed to concentrate on the personality of the communicator. The forewarned subjects were instructed to concentrate on the content of the message. Festinger and Macoby (1964) suggested that the control group was distracted by their concentration on personality. It was possible that this distraction made conditions more favorable for attitude change by inhibiting subject's ability to counterargue against the message.

In order to test their distraction hypothesis, Festinger et al. (1964) used comic films to distract subjects listening to a persuasive message. Subjects exhibited significantly greater attitude change when exposed to distraction.

Rosenblatt (1966) felt that these results may have been confounded. Comic films could produce an unusually relaxed and

pleasant atmosphere which could increase the receptivity to persuasion. This hypothesis was not confirmed. Rosenblatt found a significant attitude change in distracted subjects using slides of dental hygiene and psychology. Similar results have been recorded by several researchers (Dorsi, 1966; Kiesler & Mathog, 1968; Freedman & Sears, 1965; Osterhouse & Brock, 1970; Keating & Brock, 1974).

Baron, Baron, and Miller (1973) have reviewed much of the literature relevant to distraction and have advanced two primary explanations for these results. First, is the theory of "thought disruption". When a subject is exposed to a counter-attitudinal message he will internally create counter-arguments against the conflicting communication. These counter-arguments produce "critical resistance" to attitude change. Distraction can inhibit this counterarguing process thereby weakening the resistance to persuasion (Zimbardo & Ebbesen, 1970; Keiser & Mathog, 1968; Silverman & Regula, 1968; Keating & Brock, 1974; Rule & Rehill, 1970).

The second explanation of the facilitative effects of distraction is 'effort justification'. This alternative stems from the original theory of cognitive dissonance (Festinger, 1957). Subjects perceive that they have chosen to exert effort in order to attend to a belief-discrepant message. They justify

this expenditure by adopting the attitude expressed in the communication (Cohen, 1959; Wicklund, Cooper, & Linder, 1967; Miller & Levy, 1967).

Results of distraction research have not been as consistent as the studies cited thus far indicate. Haaland and Venkatesan (1968) found that visual and behavioral distraction actually decreased attitude change. Beitrose (1966) and Gardner (1966) found no effect of distraction on persuasive communication. Vohs and Garrett (1966), Silverthorne and Mazmaian (1975), Ware and Tucker (1974), and Silverman and Regula (1968) have all supported the hypothesis that distraction decreases the effectiveness of a persuasive message.

The critical question which arises from this body of research involves the identification of factors which can account for the apparently discrepant findings in distraction investigations. A comparison of methodological differences among these studies indicates potentially relevant disparities in the operationalizations of source credibility, content comprehension/concentration, and media of presentation. All such differences may contribute to the conflicting results.

Distraction and Source Credibility

Certainly a major factor in any persuasive message is the perceived credibility of the source delivering it. There are at least two ways credibility can affect attitude change; initial perceptions of credibility prior to the treatment and credibility evaluations made during the message. It is the latter which is most relevant to distraction research.

Ware and Tucker (1974) and Silverthorne and Mazmanian (1975) reported a decrease in attitude change when heckling was used as the distraction. A speaker who is the target of derogatory and skeptical outbursts is likely to lose some credibility before his audience. Furthermore, this effect should accentuate if the speaker does not respond to the heckles. Ware and Tucker merely had the speaker pause for a moment after a heckle and then continue his speech. Silverthorne and Mazmanian used audio taped speeches in two out of three conditions. Since hecklers were confederate in the listening audience, speaker response was not possible. This cast considerable doubt on the external validity of these studies. In reality, speakers have an option to respond to heckling.

Petty and Brock (1976) demonstrated that response can influence the effectiveness of a heckled persuasive communication.

They measured three types of response: no response, a calm-relevant response, and an upset-irrelevant response. There was a significant positive relationship between the degree of response used and subsequent persuasion ($p < .01$). There was also a strong positive correlation between the existence of a response and credibility ratings of the communicator. Thus, credibility was probably a confounding variable in both Silverthorne et al. (1975) and Ware et al. (1974). The mere fact that a speaker tolerates a disturbance could affect his appearance of confidence and self-esteem. Of the research reviewed in this paper, only Petty and Brock (1970) allowed the speaker to acknowledge the existence of distraction.

The confounding effects of credibility are not limited to research conflicting with the increased persuasion hypotheses. Supportive research often uses only highly credible sources (Osterhouse & Brock, 1970; Kiesler & Mathog, 1968). Although controls had equally credible sources, high credibility could diminish the negative effects of distraction. In another experiment reporting increased persuasion under distracting conditions, Freedman and Sears (1965) told subjects in the control group to concentrate on the content of the message. Subjects in the treatment group were given no instructions as to where to direct their concentration. This manipulation may have caused

control subjects to be more critical of the speaker advocating a position contrary to their own. This decreased credibility in the control condition may explain the relatively greater persuasion obtained in the distracted group.

In sum, discrepancies in the manipulation and control of source credibility offer a partial explanation for some of the inconsistencies in the distraction research. Credibility must be carefully controlled to allow for clear and reliable interpretation of results.

Distraction and Message Comprehension/Concentration

If a subject is to be persuaded by a message, it seems obvious that he must first comprehend its content. One relatively consistent result of studies showing decreased persuasion is a decrease in message recall (Vohs & Garrett, 1968; Haaland & Vakatesan, 1968; Breitrose, 1966).

One factor influencing recall is the complexity of the distraction. Haaland and Venkatesan (1968) had subjects fill out multiple choice and semantic differential questionnaires while listening to a persuasive message. Vohs and Garrett (1968) had their subjects perform operations upon geometric figures and solve arithmetic problems. Assuming an individual has a

limited amount of mental concentration, the amount demanded by these distractions could impair the comprehension of the persuasive messages.

Another factor influencing comprehension is the complexity of the message. For example, studies supporting the counter-argument hypothesis have generally involved relatively simple messages (Festinger & Macoby, 1964; Turnbull & Yandell, 1975; Zimbardo, Snyder, Thomas, Gold & Gurwitz, 1970). messages have either produced no effect or significantly decreased persuasion (Vohs & Garrett, 1968; Breitrose, 1966).

A third factor affecting the comprehension of a message is the perceived importance of its content. Considering the complex deception techniques used in some experiments, it is easy to understand how subjects might be confused as to which stimulus is the distraction and which is the message.

Finkleman and Glass (1970) found that when subjects have several tasks to perform (or perceive that they do) they focus attention on those perceived to be the most important. This is often done at the sacrifice of subsidiary tasks. Zimbardo et al. (1970) specifically analyzed persuasion and priority of task in distracting conditions. They hypothesized that subjects will be influenced by persuasive communication only if

they define it as their primary target of concentration. This hypothesis was overwhelmingly confirmed. Subjects perceiving the distraction as their primary task exhibited significantly less attitude change than did subjects defining the persuasive message as their primary task.

Distractions and messages which are ambiguous or in excess of what could normally be expected significantly limit the ability to generalize their effects. Levels of concentration and comprehension should be controlled and/or measured in distraction research. It is easy to understand how this confounding variable could lead to support for both the increased and decreased persuasion hypotheses.

Distraction and Media of Presentation

Each experiment must transmit the distraction via some channel of communication. These various media can be grouped into three basic categories: behavioral, audio, and visual. Audio-visual would be a fourth, but there is a lack of research utilizing this medium.

There is some consistency between the channel of distraction and the results of the experiments. Most methodologies using behavioral distractions have resulted in decreased

persuasion (Haaland & Venkatesan, 1968; Gardner, 1966; Vohs & Garrett, 1968). This is probably because behavioral distractions are more difficult and require more concentration and thereby interfere with message reception. Although Kiesler and Mathog (1968) reported increased persuasion as a function of a behavioral distraction, the relationship was obtained using a relatively simple distractor. Subjects merely copied lists of numbers which could be done without much direct concentration.

Generally, studies using visual distractions have reported increases in persuasion (Shamo & Meador, 1969; Rosenblatt, 1966; Festinger & Macoby, 1964; Osterhouse & Brock, 1970; Dorris, 1966). It is possible that visual distractions require little effort or concentration, and therefore do not inhibit message reception.

Audiological distraction has not been used very extensively in persuasion research. Silverthorne and Regula (1968) concluded that audiological distraction 'tends' to decrease persuasion. This conclusion was derived from the fact that increases in the intensity of distraction reduced attitude change.

Media of presentation is relevant to the persuasive message itself. Silverthorne and Mazmanian (1975) found a relationship between the media used to deliver the message and

the effects of distraction. Distraction had its greatest effect in decreasing attitude change when messages were delivered over audio channels as compared to either visual or audio-visual mediums. Since most distraction in persuasion utilizes verbal messages, audio distraction directly competes with the same channel as the persuasive message.

Synthesis

On the basis of the literature and arguments presented in this analysis, some tentative assumptions can be developed. First, there is a tendency for distraction to increase persuasion. Source credibility can be manipulated to enhance or detract from the effects of distraction. Second, speaker response to distractions can influence the audience's perception of the speaker and the distraction. Third, comprehension and recall correlate positively with persuasion. Fourth, subject concentration on distractions, rather than on messages, will result in decreased persuasion. Subjects who are task overloaded will usually have decreases in attitude change. If subject's concentration can be directed toward the persuasive message, the effects of task overloading will diminish.

The most crucial and consistent result from the above analysis is the apparent correlation between complexity and persuasion. Simple messages and simple distractions seem to yield increases in persuasion. Complex distractions and complex messages usually result in decreased persuasion. By treating complexity as an independent variable, the present study will attempt to locate this threshold of distraction effects. Interactive effects between message and distraction complexity can also be observed in order to find the best combinations of complexity to increase persuasion under distracting conditions.

Intellectual Task Performance

Noise is the most common type of distraction employed in studies investigating intellectual task performance. Noise is audiological distracting stimuli occurring simultaneously to a task. Since noise is omnipresent in our culture, the study of the effects of noise on task performance holds much practical value.

Although there is an extensive body of literature concerning noise and its effects on persuasion, little research has been conducted on how noise affects performance of intellectual tasks.

Research thus far yields a body of inconsistent data. While some studies indicate that noise impairs intellectual task performance, others suggest no effects or even positive effects of noise on performance (see Gulian, 1974). One explanation for the inconsistencies in results is that subjects are challenged by the distracting stimuli and hence increase their effort and concentration to overcome its effects (Weinstein, 1974). Subjects unnaturally increase their performance by mobilizing additional effort and redistributing their attention. This hypothesis is called "compensation theory".

In an effort to circumvent the compensation effect, experimenters have used several simultaneous tasks (Hockey, 1970). The purpose is to overload subjects with tasks so there is no additional effort remaining to mobilize and redistribute. The problem with this approach is a boomerang of task concentration. As reported earlier, when task overloaded, subjects focus on those tasks perceived to be most important (Finkleman & Glass, 1970). This not only permits the compensation effect to reappear, but makes standardization in interpreting performance difficult and unreliable.

Another approach for reducing compensation effects has been to increase the complexity of a single task. This eliminates untapped effort by requiring more concentration without

having the disadvantages of multiple task designs (Weinstein, 1974).

One of the more recent investigations in audiological distraction and task performance was designed to confirm earlier findings (Weinstein, 1977). By replicating earlier findings, Weinstein (1974) intended to increase the reliability of compensation theory. An attempt was also made to demonstrate that the complexity (meaningfulness) of the distraction is not related to task performance.

Weinstein (1974) utilized teletype noise at random intervals in his earlier study. He classified this noise as 'non-meaningful' because it provided a distraction, but had no discursive content. In his more recent investigation (1977), Weinstein (1977) employed random segments of radio newsbroadcasts as distractors. This was classified as "meaningful" because its content was a discernable message which would have cognitive value to subjects.

The results of both studies were that audiological distraction significantly impaired performance ($p < .001$). The performance of subjects in the distracting conditions did not differ significantly between the two studies. Hence the conclusion was made that noise type (complexity) does not significantly affect intellectual task performance.

Since each of Weinstein's studies used only one type of distraction, the design and procedures would have to be identical if conclusions are to be made concerning the relationship between noise complexity and performance. There were, however, some key methodological differences between the two studies. For example, the more recent study (1977) did not give subjects pretests, there were modifications in the task itself, and the distraction was less sporadic. This raises the possibility that differences in noise complexity were concealed by varying other factors.

The most obvious limitation of Weinstein's studies is that they can, at best, be generalized to 'highly' complex tasks. In both studies, the task involved proofreading text material for grammatical errors. There were 16 contextual errors (grammar, misspellings, or verbosity) and 17 non-contextual errors (missing or inappropriate wording, typographical) in every 50 lines. Performance was calculated by determining the amount of errors missed by the subjects. Tasks this complex may increase the sensitivity or vulnerability to distraction.

It is important to note that research has not statistically verified the compensation effect as a reliable intervening variable. Since distraction impairs performance on complex tasks, but enhances performance on simple tasks, it has been

suggested that the compensation phenomenon is responsible for the discrepancy in earlier findings (Weinstein, 1974, 1977). However, other factors may contribute to this relationship. Researchers have observed motivational effects of distraction. Unlike compensation theory, this extra drive results from uncertainty . The anxiety produced from random intervals of distraction is channeled into the task as a release mechanism (see Averill, 1973). Perhaps a highly complex task is an ineffective outlet for such uncertainty. It is also possible that complex tasks create more anxiety and a subsequent decrease in task performance.

Further, compensation theory offers an explanation only for the relationship between complexity of task and performance, not for complexity of distraction and performance. Since varying complexities of distraction (as discussed earlier) have been shown to significantly affect results in persuasion research (Vohs & Garrett, 1968; Haaland & Vakatesan, 1978), it seems likely that there are intervening variables related to the type of distraction which may be responsible for the complexity-performance relationship in intellectual task research.

There are two primary indications from the research discussed: 1) It is still uncertain as to the effects of distraction complexity on task performance, and 2) Compensation theory cannot be validated merely by demonstrating that performance on complex tasks is impaired by audiological distraction.

Conclusions

Both areas of distraction research have met with considerable obstacles. One problem has been the segregation of hypotheses. Results of distraction research in persuasion should not be overlooked when studying intellectual task performance.

Complexity of distraction has been shown to have marked effects on attitudes. If similar forces are operating, one should expect a decrease in task performance with increasing complexity of audiological distraction. Varying the meaningfulness of the distracting stimulus should permit an effective test of how distraction complexity affects task performance.

Overview of the Present Study

This investigation attempts to synthesize some of the implications from the research in both areas of distraction research (persuasion and intellectual task performance). Complexity has been shown to be a potentially significant factor influencing results of earlier studies. The present study examines the effects of complexity on intellectual task and persuasion. Complexity will be operationalized in two ways: complexity of the message/task will be determined by the reading level of a written message; and complexity of distraction will be determined by the level of meaningfulness of the distraction.

The amount of effort subjects reported to exert on the tasks was correlated to task performance in order to statistically test the validity of compensation theory. Correlations of anxiety to effort and performance are examined to determine if an anxiety based interpretation might rival compensation theory as an explanation for inconsistencies in earlier studies. Anxiety levels may directly rise with greater complexity or indirectly as a result of frustrated effort.

For the purpose of this study three hypotheses and two research questions are advanced:

Hypotheses

1. Distraction will result in significantly greater task impairment for groups engaged in a complex task than those groups engaged in a simple task.
2. Groups exposed to a meaningful distraction will exhibit significantly lower task performance than groups exposed to a nonmeaningful distraction.
3. Groups reading a complex message will exhibit significantly less persuasion than groups reading a simple message under the same distraction conditions.

Research Questions

1. What is the relationship between anxiety and complexity under distraction conditions? Measuring the correlates of anxiety on performance and attitudes should yield some conclusions as to how anxiety is related to complexity of a message and complexity (meaningfulness) of distraction.
2. How do the effects of complexity (of both distraction and message/task) differ between persuasion and intellectual task performance? If research in these two separate branches of distraction investigations are to benefit from each other,

information is needed concerning the similarities and/or differences of effects distraction and complexity have on both areas.

Methodology

Subjects

A total of 150 subjects from Junior College introductory English courses were randomly assigned to four treatment and two control conditions. The majority of the subjects were between 18 and 22 years old. The sex distribution was approximately equal.

Independent Variables

1. Distraction complexity: complexity was defined as the meaningfulness of the distraction to the subject. Two modes of distraction are utilized: non-meaningful and meaningful. Non-meaningful distraction was operationalized as teletype noise (Weinstein, 1974). This created a distraction which had no cognitive meaning to the subjects. The meaningful distraction consisted of segments of taped radio newsbroadcasts (Weinstein, 1977). Weinstein did not, however, specify the content of his broadcasts. Results of meaningful distraction could be related to the material contained in the broadcast (relevant, threatening, unimportant, etc.). The present study

utilized a 6:00 P.M. local news broadcast on WDBO television station (Channel 6). The content of the broadcast consisted of local news, weather, and national sports.

All distractions ranged from $5\frac{1}{4}$ to 25 seconds and were separated by quiet periods of varying length (Weinstein, 1974, 1977). This should have minimized physiological adaptation which has been observed under conditions of constant or predictable distraction (Reim, Glass, & Singer, 1971).

Both distractions were recorded on $7\frac{1}{2}$ " reel tape and played from the room adjacent to subjects. The sound level for all distraction was measured by a Sound Level Meter System at an ambient of 42dB. This measurement was taken approximately in the center of the treatment classroom (Weinstein, 1974, 1977).

2. Message/task complexity: Complexity was operationalized by the reading level of the message. Two levels of complexity were employed: complex and simple. The complex message had a reading level of 12.0 and the simple message 8.0. The reading levels were determined using The Dale-Chall Readability Test (Ervin, 1975). The content of the messages was not specialized. They were designed for students not extensively educated in the particular areas. The complex message was "Harvesting The Sea." The simple message was "Communication Through Art."

These topics should have been relatively neutral and have had similar persuasion potential. The pilot study measured the salience of each topic to insure no differences in the interest value of the two different messages ($F = .92$).

Dependent Variables

1. Task performance: The task consisted of a 28 question reading comprehension test devised for the reading by the E.P.S. The tests were composed of three multiple choice, eight True/False, eight matching, and nine fill in the blank questions. Scores were based on the total amount subjects answered correctly.

2. Persuasion: Following the reading, subjects were administered a four-item, 15-point linear scale measuring attitudes toward the positions advocated in the message. Three questions were used in computing subjects' persuasion scores and one was to disguise the intent of the questionnaire. The pilot study verified the relative persuasive potential of the messages by comparing the scores of two groups: one which reads the message and one which does not. Scores of two control groups in the study (one for each message) served as a baseline attitude for analysis of data. An additional question

asked S's to rate six topics on a 1 - 10 scale with one being the least important to them as individuals and 10 the most important.

3. Anxiety: Included in the dependent measure was one question, also on a 15-point linear scale, asking subjects to rate their present level of nervousness. This question was scored independently from the other dependent measures and correlated to performance and persuasion scores by groups condition.

4. Effort: Subjects were asked to rate the amount of effort they exerted on the task. These scores were analyzed across treatments and independently correlated to task performance, persuasion, and anxiety.

5. Credibility: Subjects in all conditions rated the trustworthiness and competence of the author of the message/task. This was used to control for the possible confounding effect of changes in subject perceptions of credibility.

6. Difficulty: Subjects rated the level of difficulty for each of the two tasks. These results were used to validate the different levels of complexities for the simple and complex tasks.

Design

The experiment consisted of four treatment groups in a 2 (meaningful and nonmeaningful distraction) x 2 (complex and simple task) design. There were also two control groups without distraction: one receiving the complex task/message and the other receiving the simple one.

Procedure

Subjects were volunteers for an extra credit project in their English course. They were told that the experiment was an examination of information and perceptions of students toward issues in a different college or department from their major. Subjects were instructed to read the material carefully and work at a comfortable pace. Upon completion of the reading assignments, they were administered a comprehensive questionnaire combining the task performance, persuasion, and anxiety measures. Subjects were given 30 minutes to complete the entire procedure. Subjects were debriefed at the conclusion of the session.

The experiment was conducted in a different room from the subjects regular classroom. The room was next to the Department Office so that the distraction would not be perceived as

unnatural. All groups were tested in the same room at different times. A tape recorder containing the distractions was played in the room adjacent to the testing room.

Two groups received the complex message; one distracted by the news broadcasts (meaningful) and one with the teletype noise (nonmeaningful). Two groups received the simple message; one distracted by the news broadcast and one by the teletype. The two controls were exposed to no distraction. Each control read one of the messages (complex-simple).

All data were collected and categorized by subject for the six dependent measures. Scores of task performance were on a 28 point linear scale depending upon the amount of correct answers. Persuasion scores were the combined total of responses to the three relevant attitude questions. They were analyzed on a 3 - 45 point linear scale. Ratings of trustworthiness and competence were combined on a 2 - 30 point linear scale for scores of credibility perceptions. Effort, anxiety, and difficulty were recorded based upon the original 1 - 15 point linear scale.

Pilot Study

A 4-group pilot study was conducted to validate the independent and dependent variables. Two groups read an irrelevant message and were given the relevant attitude and salience measures used in the study; one received the measures for the simple message. Two other groups read the relevant message, one complex and the other simple, then completed the attitude and comprehension measures. The attitude questionnaires were collected prior to administration of the comprehension test. This was to prevent the comprehension test from biasing the attitudes (since the two groups reading the irrelevant message did not take the comprehension test). Data were collected and analyzed before beginning the main experiment.

Results

Of the 150 subjects originally selected, 28 failed to complete the experiment: 21 subjects were absent from class on the day of the experiment, and seven were randomly excluded to provide equal n 's in the treatment groups. The remaining 122 subjects were divided into four treatment groups with 22 S's per cell and two control groups, one with 17 S's and the other with 21.

Manipulation Checks (Pilot Study)

Groups reading the relevant simple and complex messages exhibited significantly greater persuasion than groups reading the simple and complex irrelevant messages ($t = 2.33$, $df = 20$, $p < .05$; $t = 2.75$, $df = 20$, $p < .05$, respectively). Subjects reading the relevant complex message rated it as significantly more difficult than those reading the relevant simple message ($t = 2.11$, $df = 20$, $p < .05$). There was no significant difference between these groups in the amount of effort exerted on the task ($t = 1.17$) or the perceived credibility of the author ($t = .65$).

Test of Hypotheses on Task Performance

The mean task scores for subjects' performance in all conditions are shown in Table 1.

Table 1

Mean Scores on Task Performance
by Distraction and Complexity

Distraction	TASK		Grand Mean
	Simple	Complex	
Meaningful	23.9	19.1	21.5
Nonmeaningful	20.8	20.0	20.4
Control	18.7	23.9	21.3
Grand Mean	23.1	21.0	22.1

A 2 x 2 ANOVA was employed to compare the task means of the four treatment conditions. Table 2 summarizes this analyses.

Table 2
Source on Variance on Task Performance
Between Distraction and Complexity

Source of Variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Complexity (A)	210.18	1	210.18	14.36*
Distraction (B)	16.41	1	16.41	1.12
A x B	62.23	1	62.23	4.25**
Error	1,229.55	84	14.64	

* $p < .001$
 $F_{.999} (1 \text{ \& } 60) = 11.97$

** $p < .05$
 $F_{.95} (1 \text{ \& } 60) = 4.00$

Hypothesis 1 predicted that "distraction would result in significantly greater impairment of task performance for groups engaged in a complex task." Table 2 indicates that the complexity main effect was highly significant. Task performance on the complex task was significantly lower than on the simple task ($F = 14.36$, $df = 1 = 84$, $p < .001$).

In order to examine the relative effect of distraction for the simple and complex tasks, scores of all S's exposed to distraction (meaningful and nonmeaningful) were compared to

their respective control. Table 3 illustrates the means for these groups.

Table 3

Mean Scores on Task Performance for With and Without Distraction Conditions by Complexity

Condition	TASK		Grand Mean
	Simple	Complex	
With Distraction	22.4	19.6	21.0
Without Distraction	18.7	23.9	21.3

As shown in Table 3, complexity of the task affected more than just the relative difference between simple and complex task scores. Distraction polarized performance for the two tasks. The mean score for the simple task with distraction was 22.4 compared to 18.7 in the control.

Table 4 reports the results of two one-tailed t-tests used to determine if either the improvement of the simple task or the impairment of the complex task was significant.

Table 4

Comparison of Task Performance Between Distraction
(Meaningful and Non-Meaningful)
and No Distraction Conditions for Simple and Complex
Tasks by One-Tailed t-Tests

Task	Mean Difference	df	t
Simple			
<u>With distraction</u>	3.6	60	2.40*
Without distraction			
Complex			
<u>With distraction</u>	4.3	64	3.78**
Without distraction			

* $p < .01$
 $\underline{t}_{.99} (60) = 2.390$

** $p < .001$
 $\underline{t}_{.999} (60) = 3.232$

Table 4 demonstrates that both effects are highly significant. Task performance on the simple task with distraction was significantly greater than performance in the simple task control ($\underline{t} = 2.40$, $\underline{df} = 60$, $\underline{p} < .001$). The significance of this interaction is magnified by the fact that scores in the complex task control were significantly higher than scores in the simple task control ($\underline{t} = 4.45$, $\underline{df} = 37$, $\underline{p} < .001$).

The complexity of task is a significant factor in task performance under distracting conditions. Distraction tended to significantly improve performance on simple tasks while significantly impairing performance for complex tasks.

Hypothesis 2 predicted that "groups exposed to a meaningful distraction would exhibit significantly lower task performance than groups exposed to a nonmeaningful distraction. As shown in Table 2, this main effect hypothesis was not confirmed ($F = 1.12$).

The ANOVA did, however produce a significant interaction between task complexity and type of distraction ($F = 4.25$, $df = 1 \text{ \& } 84$, $p < .05$). A series of one-tailed t-tests comparing simple and complex task scores within each distraction condition were utilized probe the origins of this interaction. These comparisons are summarized in Table 5.

Table 5 indicates that almost the entire main effect reported in Hypothesis 1 was between the simple and complex cells in the meaningful distraction condition. Scores on the complex task with meaningful distraction were significantly less than for the simple performance scores on the simple and complex task in the nonmeaningful conditions ($t = .700$).

Table 5

Comparison of t-Test Significance Levels
for Task Performance Within Main Conditions

Condition	Mean Difference	<u>df</u>	<u>t</u>
<u>Simple-Meaningful</u> Complex-Meaningful	4.8	43	4.31*
<u>Simple-Non-Meaningful</u> Complex-Non-Meaningful	.8	43	.70
<u>Simple-Meaningful</u> Simple-Non-Meaningful	3.1	43	2.47**
<u>Complex-Meaningful</u> Complex-Non-Meaningful	.9	43	.84

* $\underline{p} < .001$
 $\underline{t}_{.999} (40) = 3.307$

** $\underline{p} < .01$
 $\underline{t}_{.99} (40) = 2.423$

Table 5 also indicates that performance in the meaningful and nonmeaningful condition was significantly different on the simple task. This effect, however, was opposite of the predicted direction. Subjects on the simple task with meaningful distraction were significantly higher than with nonmeaningful ($\underline{t} = 2.47$, $\underline{df} = 43$, $\underline{p} < .01$).

Another effect of the interaction ($\underline{p} < .05$) between distraction and complexity was the relative difference of the treatment

conditions to their controls. Table 6 summarizes the results of five one-tailed t-tests used to examine this effect.

Table 6

Independent Significance Comparisons of Treatment Conditions to Controls for Task Performance by One-Tailed t-Tests

Condition	Mean Difference	<u>df</u>	<u>t</u>
<u>Complex Meaningful</u> Complex Control	4.8	42	4.11*
<u>Complex NonMeaningful</u> Complex Control	3.9	42	3.44**
<u>Simple Meaningful</u> Simple Control	5.2	38	3.60**
<u>Simple Nonmeaningful</u> Simple Control	2.1	37	1.19
<u>Complex Control</u> Simple Control	5.2	37	4.45*

* $p < .001$

$\underline{t}_{.999} (40) = 3.307$

$\underline{t}_{.999} (30) = 3.646$

** $p < .01$

$\underline{t}_{.99} (40) = 2.704$

$\underline{t}_{.99} (30) = 2.750$

As shown by Table 6, the meaningful distraction groups for both the simple and complex tasks were significantly different from their controls ($\underline{t} = 3.60$, $\underline{df} = 38$, $p < .001$; $\underline{t} = 4.11$, $\underline{df} = 42$, $p < .001$, respectively). The nonmeaningful distraction

conditions, however, differed significantly from the control only on the complex task ($t = 3.44$, $df = 42$, $p < .001$). Scores for the simple task nonmeaningful distraction group were not significantly different from the simple task control ($t = 1.19$).

Meaningful distraction was not significantly different from nonmeaningful distraction when the effect was to impair task performance on the complex task. Meaningful distraction did result in a significant difference from nonmeaningful distraction when the tendency was to improve performance on the simple task. The interaction of nonmeaningful distraction with complexity indicates that the simple task is more sensitive to the type of distraction, whereas the complex task is more sensitive to the existence of distraction.

Persuasion

The mean persuasion score for the simple message ($\bar{X} = 22.15$) was slightly higher than for the complex message ($\bar{X} = 21.63$). The persuasion mean in the meaningful distraction conditions ($\bar{X} = 20.35$) was lower than the nonmeaningful conditions ($\bar{X} = 21.73$). Table 7 reports the persuasion means for all treatment and control groups.

Table 7

Mean Scores of Persuasion by Distraction and Complexity

Distraction	Simple	Complex	Grand Mean
Meaningful	21.6	19.1	20.4
Nonmeaningful	22.7	20.8	21.8
Control	22.1	25.0	23.6
Grand Mean	22.1	21.6	21.9

A 2 x 2 ANOVA was employed to analyze persuasion between the four treatment conditions. Table 8 indicates the results of this analysis.

Table 8

Source of variance on persuasion Measures
Between Distraction and Complexity

Source of Variation	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Complexity (A)	39.91	1	39.91	1.57
Distraction (B)	.27	1	.27	0.01
AB	25.14	1	25.14	0.92
Error	2296.14	84	27.33	

Hypothesis 3 predicted that "groups reading a complex message under distracting conditions would exhibit significantly less persuasion than groups reading a simple message under the same distracting condition." The F ratio ($F = 1.57$) does not support this complexity main effect. However, the hypothesis is indirectly supported through a series of one tailed t-tests between treatment and control groups. Table 9 reports the results of these comparisons.

Table 9
Independent Significance Comparisons
for Task Performance by One-Tailed t-Tests

Condition	Mean Difference	<u>df</u>	<u>t</u>
<u>Complex Meaningful</u> Complex Control	5.9	42	3.74*
<u>Complex NonMeaningful</u> Complex Control	5.8	42	2.42**
<u>Simple Meaningful</u> Simple Control	1.5	42	.202
<u>Simple NonMeaningful</u> Simple Control	.6	42	.440
<u>Complex Control</u> Simple Control	3.1	37	1.72***

* $p < .001$
 $t_{.999} (40) = 3.307$

*** $p < .05$
 $t_{.95} (30) = 2.042$

** $p < .025$
 $t_{.975} (40) = 2.021$

Table 9 reveals that persuasion scores in the complex message control were significantly greater than scores in the simple message control ($t = 1.72$, $df = 37$, $p < .05$). Further, subjects in the complex message meaningful distraction condition exhibited significantly less persuasion than the complex control ($t = 3.74$, $df = 42$, $p < .001$). There was no significant difference, however, from the simple message control for either the simple message meaningful or nonmeaningful distraction conditions ($t = .20$; $t = .44$, respectively). These results indicate that the complex message does differ from the simple message in its relative effect from controls. The fact that the resulting scores in the treatment groups did not significantly differ is a result of the higher scores in the complex control.

Anxiety

The mean anxiety score for the complex conditions ($\bar{X} = 6.73$) was higher than for simple task groups ($\bar{X} = 3.66$). The anxiety mean in the meaningful distraction cells ($\bar{X} = 6.40$) was higher than for the nonmeaningful ($\bar{X} = 4.35$). As seen in Table 10, means were polarized between the simple and complex tasks under meaningful distraction conditions.

Table 10

Mean Scores of Anxiety by Distraction and Complexity

Distraction	TASK		Grand Mean
	Simple	Complex	
Meaningful	3.3	9.5	6.4
Nonmeaningful	3.4	5.3	4.4
Control	4.3	5.4	4.9
Grand Mean	3.7	6.7	5.2

A 2 x 2 ANOVA compared anxiety scores of all treatment groups. Table 11 illustrates the results of this operation.

Table 11

Source of Variance on Anxiety Ratings
Between Distraction and Complexity

Source of Variance	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Complexity (A)	368.18	1	368.18	30.59*
Distraction (B)	84.05	1	84.05	6.98**
AB	96.18	1	96.18	7.99***
Error	1011.18	84	12.03	

* $p < .001$
 $F_{.999} (1 \text{ \& } 60) = 11.97$

** $p < .05$
 $F_{.95} (1 \text{ \& } 60) = 4.00$

*** $p < .01$
 $F_{.99} (1 \text{ \& } 60) = 7.08$

As shown in Table 11 both main effects and the interaction were highly significant. Anxiety scores were significantly greater for the complex tasks than for the simple tasks ($F = 30.59$, $df = 1 \text{ \& } 84$, $p < .001$). Meaningful distraction conditions produced significantly higher anxiety scores than did the nonmeaningful conditions ($F = 6.98$, $df = 1 \text{ \& } 84$, $p < .05$). The significant interaction ($F = 7.99$, $df = 1 \text{ \& } 84$, $p < .01$) was probed with one tailed t-tests as shown in Table 12.

Table 12

t-Test Significance Levels for Anxiety Scores
Between Treatment Conditions

Condition	Mean Difference	<u>df</u>	<u>t</u>
<u>Simple-meaningful</u> Complex-meaningful	6.2	43	4.28*
<u>Simple-nonmeaningful</u> Complex-nonmeaningful	2.0	43	2.25**
<u>Simple-meaningful</u> Simple-nonmeaningful	.1	43	.01
<u>Complex-meaningful</u> Complex-nonmeaningful	4.1		

* $p < .001$

t.999 (40) = 3.30

** $p < .025$

t.975 (40) = 2.02

Table 12 demonstrates that anxiety levels differed between meaningful and nonmeaningful conditions only on the complex task. Anxiety in the complex-meaningful group was significantly greater than in the complex-nonmeaningful group ($t = 2.07$, $df = 43$, $p < .025$), whereas anxiety levels in the simple task conditions were largely unaffected by the type of distraction ($t = .48$).

Complexity alone, however, is an insufficient determiner of anxiety levels. A one tailed t-test between the simple and complex task controls resulted in nonsignificance ($t = 1.09$). Thus, the imposition of distraction is responsible for the difference between complex and simple task anxiety ratings. Only the complex task conditions were sensitive enough to interact significantly with the type of distraction.

In an effort to further analyze research question 1, Pearson Correlation Coefficients were conducted to determine if anxiety levels were related to task scores, persuasion levels, or estimated effort. All of these comparisons resulted in correlations beyond the .01% significance level. The strongest correlation was observed between anxiety and persuasion scores ($r = -.94$, $df = 88$, $p < .001$). Subjects exerting more effort tended to report lower levels of anxiety ($r = -.76$, $df = 88$,

$p < .001$). Subjects reporting lower anxiety also tended to have higher task scores ($r = -.74$, $df = 88$, $p < .001$).

Other Dependent Measures

The mean effort ratings for all treatment groups are shown in Table 13.

Table 13

Mean Scores of Effort by Distraction and Complexity

Distraction	TASK		Grand Mean
	Simple	Complex	
Meaningful	7.7	5.9	6.8
Nonmeaningful	6.6	7.3	7.0
Control	6.7	8.1	7.7
Grand Mean	7.0	7.1	7.1

Table 13 shows that effort ratings were polarized between the simple and complex task in the meaningful conditions ($\bar{X} = 7.7$; $\bar{X} = 5.9$, respectively).

Table 14 illustrates the results of a 2 x 2 ANOVA of effort ratings between treatment conditions.

Table 14
Source of Variance for Effort Ratings
Between Distraction and Complexity

Source of Variance	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Complexity (A)	7.10	1	7.10	1.00
Distraction (B)	.56	1	.56	.08
AB	34.37	1	34.37	4.86*
Error	594.68	84	7.80	

* $p < .05$

$\underline{F}_{.95} (1 \text{ \& } 60) = 4.00$

The ANOVA resulted in no significant difference for the main effects. There was, however, a significant interaction between task and distraction ($\underline{F} = 4.85$, $\underline{df} = 1 \text{ \& } 84$, $\underline{p} < .05$). A t-test yielded no significant difference in effort between the simple and complex task control groups ($\underline{t} = .46$).

Pearson coefficients produced a high positive correlation between effort and task performance ($\underline{r} = .84$, $\underline{df} = 88$, $\underline{p} < .001$) and a high negative correlation between effort and anxiety ($\underline{r} = .76$, $\underline{df} = 88$, $\underline{p} < .001$). A positive correlation was also observed between effort and persuasion ($\underline{r} = .50$, $\underline{df} = 88$, $\underline{p} < .001$).

A one tailed t-test was used to verify the task complexity levels. Subjects in the control conditions rated the complex task as significantly more difficult than the simple task ($\underline{t} = 5.16$, $\underline{df} = 37$, $\underline{p} < .001$). The perceived difficulty between the simple and complex tasks across distraction conditions was not significant ($\underline{F} = 1.81$).

Additional checks on validity were made on credibility and salience. A 3 x 2 ANOVA (controls included) of credibility ratings produced nonsignificance for both task and distraction main effects ($\underline{F} = .98$; $\underline{F} = 1.19$, respectively). The mean salience score for the simple task control group was 4.5 and the complex task control mean was 5.1. A one tailed t-test of salience between the simple and complex controls resulted in nonsignificance ($\underline{t} = .86$).

Research question 2 asked if there is a significant relationship between task performance and persuasion with respect to distraction or task. A pearson r coefficient revealed a significant positive correlation between task scores and persuasion ($\underline{r} = .55$, $\underline{df} = 88$, $\underline{p} < .001$).

Discussion

The strongest support was received for hypothesis 1: distraction impaired performance on complex tasks significantly more than it did on simple tasks ($p < .001$). A principle factor for these results is the polarizing effect distraction had on the simple and complex tasks. Simple task performance was significantly improved ($p < .01$), while complex task performance was significantly impaired ($p < .001$). This effect is not solely a function of task complexity. Higher scores on the complex task in the control conditions ($p < .001$) indicate that it is the interaction of task and distraction which polarizes the scores.

The meaningful distraction significantly enhanced both directions of the polarization. The simple task-meaningful distraction group had the highest mean score ($\bar{X} = 23.9$) and the complex task-meaningful distraction had the lowest ($\bar{X} = 19.1$).

It is interesting to note that the degree of effect, although opposite directions, was approximately the same for both meaningful distractions. The mean difference on the simple task between the meaningful distraction and control groups was 4.8. Similarly, for the complex task, the mean difference between the meaningful distraction and control groups was 5.2. Both of these differences achieved significance beyond .01%.

The difference between meaningful and nonmeaningful distractions varied with task complexity. Task scores in the meaningful and nonmeaningful conditions differed significantly only on the complex task. Since the degree of effect for the meaningful distraction was approximately the same for both tasks, the interaction between task and complexity ($p < .05$) probably results from a fluctuation of the nonmeaningful distractions between the simple and complex tasks. Scores on the simple task differed significantly between meaningful and nonmeaningful conditions ($p < .01$), but not between the nonmeaningful and control. Conversely, scores on the complex task did not vary significantly between meaningful and nonmeaningful conditions, but did between the nonmeaningful and control ($p < .001$).

These results indicate that meaningful and nonmeaningful distractions may be operating on thresholds rather than a linear progression. Such a linear relationship between distraction and task may exist, but the two distractions studied in this investigation could be at, or near, the threshold of that progression. Once this threshold is passed, the positive effects of distractions boomerang and performance becomes significantly impaired.

The explanation of polar effects was partially supported by Weinstein (74, 77). He maintained that subjects in a simple

task compensate for distraction by directing additional effort to redistribute and are consequently hindered by distraction.

There are at least two major inconsistencies in using compensation theory to explain the results of this study:

(1) There is a high positive correlation between effort and task performance ($r = .84$). According to Weinstein (74, 77) the amount of effort remains fixed regardless of the task. The additional effort which is being mustered in the simple task is being used on the complex task. Thus, effort should remain relatively constant as task scores change. The tendency for subjects who had higher task scores to also have higher effort ratings, weakens the compensation phenomenon as the sole intervening variable. In addition, there was a significant variance of effort ratings resulting from the interaction of distraction and task ($p < .05$). (2) There are some significant differences and interactions between types of distractions. Weinstein (77) also maintained that the type of distraction does not significantly affect task performance. Thus, the existence of any distraction would polarize task scores. Task scores in the present study were significantly higher on the simple task when accompanied by meaningful, as opposed to nonmeaningful, distractions ($p < .01$). This investigation also yielded a significant interaction between the type of distractions and complexities of task ($p < .05$).

Although levels of effort are inconsistent with compensation theory, this does not exclude them as possible intervening variables.

Another possible intervening variable is anxiety. The high negative correlation between anxiety levels and task scores indicates that subjects performance may be due, in part, to the amount of tension they feel in any particular condition ($r = -.74$). The polarized task means were highest in the simple task-meaningful distraction condition ($\bar{X} = 23.9$) which had the lowest anxiety mean ($\bar{X} = 3.3$). The lowest task mean ($\bar{X} = 19.1$) was in the complex meaningful condition which had the highest anxiety mean ($\bar{X} = 9.5$).

There was, however, an opposite interaction of M-NM distractions between anxiety and task measure. Task performance was significantly different between meaningful and nonmeaningful conditions on the simple task ($p < .01$), but not on the complex task; whereas anxiety levels were significantly different between meaningful and nonmeaningful distraction conditions on the complex task ($p < .025$), but not for the simple task. These results might be due to a lack of sensitivity of nonmeaningful distraction conditions to anxiety. This would explain the strong inverse relationship between anxiety and task scores for the meaningful conditions where they are polarized, but not for the nonmeaningful.

The high negative correlation between anxiety and effort ($r = -.76$) suggests some type of anxiety-effort-performance tryadic interaction. There are at least two possible explanations for this relationship. Anxiety levels may change among treatment groups. The higher anxiety levels may frustrate effort, resulting in lower performance. On the contrary, if effort was frustrated by some other variable(s), then anxiety might increase concomitantly. Since a complex task should require more effort than a simple one, the fact that effort ratings were lowest in the complex conditions would support either of these explanations.

The support for these suggestions is more convincing when only observing effects in the meaningful distraction conditions. Most of inconsistencies in scores seem to result from the non-meaningful distraction. Results from the meaningful distraction conditions are fairly consistent: the highest and lowest scores for performance, anxiety, and effort are all polarized by the simple and complex tasks with meaningful distraction. The simple task-meaningful distraction groups had the lowest anxiety ($\bar{X} = 3.3$), highest effort ($\bar{X} = 7.7$), and the highest performance ($\bar{X} = 23.9$). The complex task-meaningful distraction condition exhibited the highest anxiety ($\bar{X} = 9.5$), lowest effort ($\bar{X} = 5.9$), and the lowest performance ($\bar{X} = .9.1$). The

significance of distractions' role in the polar effect is magnified by the fact that there were significant differences between simple and complex task controls for anxiety and effort ($\underline{t} = 1.09$; $\underline{t} = 1.46$, respectively).

This analysis, however, does explain why the polarizing occurs. Complexity is a key variable which could both motivate and hinder task performance. Subjects may try harder when they are exposed to distraction because of extra anxiety and not because they are trying to compensate for the distraction (Averill, 1973). Thus, excessive complexity may create excessive anxiety which frustrates the motivational effects of distraction.

If a nonmeaningful distraction was not very complex, then the combination of a simple task and a nonmeaningful distraction would not produce enough complexity to stimulate extra motivation. This could explain the lack of significance between the simple task nonmeaningful distraction condition and the simple task control on performance scores ($\underline{t} = 1.19$). The meaningful distraction, having discursive content, would provide increase in complexity on the simple task to stimulate additional motivation in subjects. This can be demonstrated by the higher scores for the simple task-meaningful distraction group as compared to the simple task control ($\underline{p} < .001$). The relative decrease in

performance on the complex task with distraction could be a result of a complexity overload. This notion is consistent with the reasoning of fear appeal theories in suggesting that too much of a positive stimulus can create a negative effect (Bobren, 1959; Millman, 1965; Singer, 1965). The combination of a complex task with any distraction provides enough total complexity to reverse the positive effects of distraction on task performance.

Complexity may be acting upon anxiety levels in varying task performance. Changes in both anxiety and effort ratings were highly correlated to changes in task and distraction complexity ($r = -.74$; $r = .84$, respectively). Thus, excessive levels of complexity may create excessive anxiety. This could frustrate effort and correspondingly decrease performance.

Persuasion was found to significantly differ with respect to distraction for the complex message. Although persuasion scores did not differ significantly within the treatment conditions, there was a significant effect of distraction. Both the meaningful and nonmeaningful distraction conditions of the complex message exhibited significantly less persuasion than the complex control ($p < .001$; $p < .001$). The lack of significance between the two distractions for the complex message may be explained similarly to task performance. Any distraction with

a complex message results in an overload of complexity and consequently inhibits the effectiveness of the persuasive communication.

The negative correlation between anxiety and persuasion was extremely high ($\underline{r} = -.94$). This effect may be partially an indirect result of decreased comprehension and recall as evidenced by the lower task performance for groups less persuaded. However, the correlation between anxiety and persuasion is much higher than between task performance and persuasion ($\underline{r} = .55$). This indicates that at least part of the differences in persuasion may be a direct result of higher levels of anxiety and/or complexity. Appendix D illustrates the processes involved in all six cells based upon the complexity threshold theory proposed in this study.

Using the complexity theory to interpret the results of the present study leads to the conclusion that there is an interaction between complexity of distraction and task/message. Complexity of the task/message alone does not create the negative effects found in the interactions with distraction. The higher scores for the complex control over the simple control for both persuasion and task performance demonstrate the relevance of distraction in producing complexity overload ($\underline{p} < .05$; $\underline{p} < .001$, respectively).

There are some limitations in generalizing the results of the present study. Since anxiety and effort were studied secondarily as possible intervening variables, the dependent measures employed were relatively simple. Using only one question each score subjects' responses limits the external validity of any conclusions as to significance of anxiety and effort levels. In addition, self-estimates by subjects should be combined with external ratings to more accurately determine the relationship between anxiety, effort, performance and persuasion.

Further, subjects' attitudes were measured after they completed the comprehension test. This may have affected their attitudes differently than if the measure had been taken immediately after they read the message. Consequently, the results of this investigation can only be generalized to attitudes following a written examination on a persuasive message. A study is needed to manipulate the order of testing for performance and persuasion to determine if the order of testing inhibits reliability. The design of this experiment could be replicated utilizing the same four task-distraction combinations with eight treatment conditions: four in which persuasion was measured prior to the comprehension test and four testing persuasion subsequent to the task.

The scoring of the comprehension test could also confound interpretation of task performance. This experiment assigned scores based upon the total number of correct answers out of 28 questions. Decreases in performance could be a result of more unanswered questions instead of decreased accuracy. This would indicate that the distraction-task interaction may be affecting the speed at which a subject can work rather than his/her ability to answer correctly. although there was no significant difference in the number of unanswered questions on the simple and complex tasks with distraction from their respective controls ($\bar{t} = 1.32$; $\bar{t} = 1.03$, respectively), scores on the complex task with distraction did include significantly more unanswered questions than the simple task with distraction ($\bar{t} = 2.17$, $df = .87$, $p < .05$). The method used to determine task scores in this study may account for part of the high degree of significance found in the complexity main effort supporting hypothesis 1.

The discussion of results presented in this chapter does involve a great deal of speculation. The multitude of potential intervening variables combined with limited previous research makes it impractical to do more than suggest directions for further research. This study was not conducted to provide any definite conclusions of the distraction-task phenomenon.

The primary aim was to demonstrate that alternate variables, previously uncontrolled, may help understand the inconsistencies in earlier research.

Future research in the field of distraction should concentrate on enhancing the external validity of results. Experiments should diversify the type of subjects and situations under investigation. The effects of distraction may be situationally specific. More field research would enable us to study real-world application of distraction. Research on physician-patient interactions has recently suggested that communication variables may play a major role in determining subsequent patient compliance. Low compliance may be partially a result of external distractions while doctors are giving their patients complicated instructions. If the instructions are relatively simple, perhaps intentionally creating certain types of distractions may improve the patients compliance. Distraction should also be studied in certain legal situations. Research on cameras in courtrooms could consider the complexity of the trial in assessing the effects on juries. If cameras are found to be distractors, they may actually improve a jurors comprehension of relatively simple judicial instructions or facts pertaining to the case.

The present study suggests some strong implications for education. Since distraction could be beneficial to specific

academic testing situations, it must be considered whether or not it would be ethical to improve student performance on simple tasks by intentionally creating distractions. Even if this procedure is considered ethical, the determination of which distractions to employ during various tests requires a great deal more accuracy in our ability to predict the effects of this phenomenon. The study also implies that educators should be more cognizant of distractions which may be impairing student performance. More complicated tasks should be performed with very little, if any, distraction.

Distraction field research in secondary public schools could provide insight on structural consideration of school buildings. In an attempt to increase efficiency and decrease cost, several county school boards are designing their schools on the pod system. The interior of these schools are primarily composed of temporary panels which leave a large amount of open space between classrooms. The resulting distraction could be significantly affecting the performance of many students. Research correlating student performance under distracting conditions with the length of time they have been in a pod school could indicate long-term effects of distraction. Perhaps tolerance levels rise as children adapt to the distractions. Educators have a moral obligation to consider distraction research when

planning the construction and functioning of our educational institutions.

More specific research in education, as well as most other crucial social institutions, will improve our understanding of our immediate environmental influences. Distraction research has become too esoteric and severely limited by laboratory settings. It is time we take this textbook knowledge and apply it to our everyday life where the situations are real and the consequences are significantly affecting our lives.

Summary

There were three primary objectives of this investigation:

(1) To demonstrate that inconsistencies in previous research may, in part, be due to a lack of controls on complexity. The results and discussion of this study indicate that both distraction and task complexities are capable of confounding experimental results. These variables must either be manipulated as independent variables or controlled as a check on internal validity. (2) To test three specific hypotheses: Hypothesis 1 predicted that "distraction would result in significantly greater impairment of task performance for groups engaged in a complex task." This was strongly supported in that complex task scores were significantly lower than simple task scores ($p < .001$). Distraction resulted in a significant decrease in performance for the complex task over its' control ($p < .001$) and a significant increase in performance for the simple task over its' control ($p < .01$). Hypothesis 2 predicted the "groups exposed to a meaningful distraction would exhibit significantly lower task performance than groups exposed to a nonmeaningful distraction." This hypothesis was not confirmed. There was, however, a significant interaction between distraction and task ($p < .05$). Task scores were polarized in the meaningful distraction condition between the simple and complex tasks ($p < .001$), but no significance

was found between the tasks in the nonmeaningful distraction conditions ($t = .70$). Hypothesis 3 predicted that "groups reading a complex message under distracting conditions would exhibit significantly less persuasion than groups reading a simple message under the same distracting condition." This hypothesis was partially supported. Although persuasion did not differ significantly between treatment conditions, the complex message with distraction did result in significantly less persuasion than the complex control ($p < .001$). Persuasion was not significantly affected by distraction for the simple message ($t = .32$). This study suggests that varying levels of complexity may be responsible for the results of all three hypotheses. The complexity of both distraction and task interact to determine levels of intellectual task performance and persuasion. This complexity level is highest for the complex task with meaningful distraction and lowest for the simple task with non-meaningful distraction cell. It was also suggested that the varying levels of complexity may be acting upon anxiety and/or effort levels in affecting the outcomes of the experiment. Higher anxiety was associated with less effort ($r = -.76$) and a corresponding decrease in both persuasion ($r = -.94$) and task performance ($r = -.74$). It is recognized that the anxiety and effort dependent measures are lacking sophistication. They do,

however, provide some insight into distraction phenomenon and variables which may be associated to it. (3) To study two research questions: First, "What is the role of anxiety in task performance and persuasion under distracting conditions?"

Anxiety correlated negatively with all other dependent measures and all correlations were beyond the .001 level. Anxiety scores were polarized in the meaningful distraction conditions between the simple and complex task. It is apparent that anxiety definitely has some relationship to distraction. The limited scope of the dependent measures in this experiment makes specific conclusions unrealistic. It was, however, suggested that higher anxiety levels frustrate comprehension and consequently reduces task performance and persuasion." Second, "What is the relationship between the effects of distraction on task performance and on persuasion. A positive correlation was observed between persuasion and task performance ($r = .55$). Scores for both were polarized in the meaningful distraction condition between the simple and complex tasks. Much still needs to be accomplished to answer this question further. Very little emphasis has been placed on overlapping research in distraction on persuasion with research on intellectual task performance. This research question was designed to stimulate some speculation as to the differences and/or similarities between intervening variables in the two areas of research.

There needs to be more continuity between the results of distraction studies. More reliable conclusions can be made concerning the intervening variables responsible for the effects of distraction when we better understand how they interact with different functions in our environment. Whatever the specific effects of distraction, it is clear that the environmental phenomenon exists in virtually every area of social life. The influential force of this phenomenon mandates that we, as Social Scientists, learn how to minimize the counterproductive consequences to society of distraction which we, as social beings, create. We are also bound to strive to harness the beneficial effects of this phenomenon to better serve the public good.

A P P E N D I X

APPENDIX A-1

COMMUNICATION THROUGH THE ARTS

ABOUT THE PASSAGE

Some people do not think of the arts as being a means of communication. How does a work of art communicate something to you?

REASON FOR READING

In this passage, you will meet some art terms which may be new to you. Try to notice them as you read and see if you can figure out what they mean.

READ THE PASSAGE

Joan and Mark were walking home from seeing a movie when they stopped to look at a picture in the window of a store.

"I think it's a perfectly horrid picture," Joan said, looking critically at the seascape in front of her. "The colors are dark, the waves are too big, and it makes me feel afraid."

"Well, I like it," replied Mark. "I think the painter is very clever to make you feel afraid. I agree that the colors are dark and the waves are simply enormous, but they give me a feeling of power and strength."

"Well, it reminds me of the day we went sailing with John. Do you remember it? The sea was rough, and I got awfully sick."

"That's probably why it makes you afraid," said Mark.

With an "Oh, don't be silly," Joan dismissed the whole subject of the seascape.

But Mark had been right. People do react in certain ways to a painting because they associate, or connect, some former personal experience with the scene in front of them. Thus Joan's feelings toward the seascape may well have been due to something in her subconscious mind which made her associate the experience she had had when sailing with her appreciation of the picture. This is called reaction by "association" and accounts for the many different interpretations of a painting.

Reaction by association is usually the first way people respond to a painting, but it is not the only way. In order to appreciate a painting fully and understand what a painter is trying to say, we should also react to its artistic qualities. We should understand the visual forms the artist uses to convey the ideas, thoughts, and feelings behind the painting. The visual forms, sometimes called the "physical characteristics," or "basic elements," of a painting are its lines, shapes, colors, shading (called "value"), and texture (the sense of touch which a painting gives).

It is much more difficult to appreciate a painting for its physical characteristics than for the personal associations it gives us. We can develop our understanding, however, by making a special point of looking for the visual forms. For example, in the seascape which caught the eyes of Joan and Mark, the artist had used colors to express his feelings about the sea.

Just as paintings can communicate many different ideas and feelings, so can all other forms of art, such as sculpture, music, literature, and dance. They do so by combining certain physical characteristics which stimulate a reaction within us. It is both the personal associations a painting gives and our understanding of its physical characteristics that make a painting enjoyable for us.

Thinking it Over

- (1) How does a work of art communicate something to people?
-
-

(2) What do the following art terms mean?

- (a) seascape
- (b) association
- (c) value
- (d) texture

STUDYING THE PASSAGE

(1) Find the Main Idea: Choose one.

- (a) Seascapes always make Joan feel sick.
- (b) Artists use the same physical characteristics in painting.
- (c) Paintings and other works of art communicate ideas, thoughts, and feelings.
- (d) Paintings are to be appreciated for what they are.

(2) Find the Facts: Mark each of these true or false:

- (a) Joan said the seascape made her feel afraid. (a) _____
- (b) Mark said the seascape made Joan feel afraid because it reminded her of a storm at sea. (b) _____
- (c) A painting will produce the same reaction in all the people who see it. (c) _____
- (d) We usually connect some past experience with a painting. (d) _____
- (e) We need know nothing about the physical characteristics of a painting to appreciate it fully. (e) _____
- (f) By "visual forms" we mean the physical characteristics of painting. (f) _____
- (g) Lines and color are two physical characteristics of a painting. (g) _____
- (h) We can train ourselves to understand the way an artist uses physical characteristics. (h) _____

(3) Find the Order: Put the following in the order in which they appear in the passage:

- (a) Joan's feelings toward the seascape may have been due to something in her subconscious mind. _____
- (b) The artist uses visual forms to convey his thoughts, ideas, and feelings. _____
- (c) Sculpture and music can also communicate ideas and feelings. _____

- (d) Jean said it was a perfectly horrid picture. _____
 - (e) Association accounts for many different reactions to paintings. _____
 - (f) Visual forms are sometimes called "basic elements." _____
 - (g) Mark said the picture gave him a feeling of power and strength. _____
 - (h) Shading and shapes are visual forms. _____
- (4) Go Beyond the Facts: When you and your friends look at the school art show: (Choose one)
- (a) You all react to them in the same way.
 - (b) You all react to them in different ways.
 - (c) You all dislike them because they were not done by professional painters.
 - (d) None of you appreciate them because you do not know much about art.
- (5) Determine the Writer's Style and Technique: Which one of the following methods does the writer use to introduce information on art?
- (a) An anecdote.
 - (b) A joke.
 - (c) A vivid description.
 - (d) A scientific explanation.
- (6) Words and Their Meanings: Find the underlined word in the passage which fits each of these definitions. Three of the words are very similar in meaning, so be careful.
- (a) rudiments, fundamental parts or qualities.
 - (b) sent away, put aside.
 - (c) something personally undergone or lived through.
 - (d) distinguishing qualities, traits, or properties.
 - (e) respond to
 - (f) enjoyment, recognition of the value of
 - (g) make known by statement, suggestion, appearance, or gesture.
 - (h) traits, attributes, properties.
 - (i) relating to that part of his mental activity of which a person is not aware.

APPENDIX A-2

Please read each question or statement and mark the response closest to your opinion.

1. Rate the following topics according to their importance to you as an individual. Use a 10 point scale with 1 the least important and 10 the most important.

_____ NATIONAL PARK SYSTEM	_____ ART COMMUNICATION
_____ LEGALIZED GAMBLING	_____ ORANGE COUNTY SEWER SYSTEM
_____ SYNTHETIC NUTRIENTS	_____ FOREIGN AID

2. Communication is irrelevant to art appreciation.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
STRONGLY DISAGREE			DISAGREE			UNDECIDED			AGREE			STRONGLY AGREE		

3. Courses in Communication should be required by all Art majors.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
STRONGLY DISAGREE			DISAGREE			UNDECIDED			AGREE			STRONGLY AGREE		

4. If the university offered a free seminar on Communication in Art you would:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
DEF. NOT ATTEND			PROB. NOT ATTEND			UNDECIDED			PROB. ATTEND			DEF. ATTEND		

5. The relationship between your major and Art is:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
VERY WEAK			WEAK			NEUTRAL			STRONG			VERY STRONG		

APPENDIX B-1

HARVESTING THE SEA

- ABOUT THE PASSAGE . As the world population grows, man will turn to the sea for his needs. Can you name three substances which the ocean could yield?
- REASON FOR READING Notice the way in which the passage is written. What do you gain most from reading it?
- (a) Specific knowledge of details and facts.
 - (b) Knowledge of general facts.
 - (c) Understanding of a cause and effect.
 - (d) Ability to follow a comparison.

READ THE PASSAGE

"The sea is the vast reservoir of nature," said Captain Nemo in Twenty Thousand Leagues Under the Sea. These words have even greater meaning in our growing world today. Our ever increasing population and diminishing reserves of productive land are turning us to this new frontier, and we are seeking to discover the uncounted products it has for us to harvest.

Numerous devices like bathyscaphs and Sea Labs are taking men into virgin depths to examine its mysterious life; echo-soundings map its canyons and ridges; cores of sediment drilled from the sea bed reveal what minerals are available miles down. Much information about the potential of the sea has been gained from these first feeble attempts to explore it. In the years to come major efforts will be directed toward developing methods for extraction of this wealth.

But what exactly are the resources in the sea? To begin with, the sea water itself is a great resource, and when an economical way has been discovered to remove its salt, it will provide us with the water that our agricultural and industrial processes require in rapidly growing quantity. Minerals dissolved in the oceans and buried in their floors will augment our dwindling land deposits.

Another great possibility of the sea lies in its potential as a food source. Of course man has always eaten organisms from the sea; they have long been a staple item in the diets of such countries as India, Japan, and Norway. We Americans have long considered shrimp and lobster, salmon and sole not only nutritious but exceptionally tasty fare. On the less glamorous side, what would we do without tuna salad or a tuna sandwich on the menu?

Now that man has greater need than ever before to obtain nutrition from the depths of the sea, many nations are searching for ways to enlarge its yield. One method involves increasing the nutrients in an area so that the organisms there will enlarge and multiply to provide a bigger catch. In open sea, this would be prohibitively costly, but Yugoslavian scientists have been able to increase the growth of mussels and oysters by fertilizing a shallow bay. Another method is to "farm" the sea, to take organisms from one area and replant them in another spot.

Marine biologists in Japan have refined a farming technique which is centuries old. Traditionally, the Japanese would trap small shrimp and artificially feed them in enclosed lagoons. This produced larger animals and made them easier to harvest. Recent research has now made it possible to eliminate the first step and raise shrimp in total captivity from egg to market size.

Besides shrimp, oysters, and mussels, several species of fish are currently raised as crops. In salty shallow ponds and mangrove swamps of coastal Asian countries, traditional methods of culture yield from 300 to 1,500 pounds of fish per acre per year. Clearly, shallow-water farming is richly rewarding and has the potential to exceed the output of the best land-based farms.

At the present time, little direct use is made of algae, the plants which grow in the sea. The nutritional value of seaweed - except as a source of vitamins and minerals - is fairly small.

South Wales is the center of British seaweed consumption. There a red seaweed called laver is collected at low tide and used to make a shiny, gelatinous mass called "laverbread," which is fried and eaten with bacon and eggs. Most of the seaweed that is eaten in the world is consumed by the Japanese, who prepare it in a variety of dishes. Hundreds of thousands of Japanese workers gather and process more than a million tons of laver

every year, and a growing portion of this harvest is produced from farming operations.

Across the Pacific, Americans are using floating mechanical reapers to cut giant kelp, a brown seaweed which occurs in great natural beds off the California coast. Fronds of this kelp may reach up to two hundred feet in length, and it grows faster than any other plant in the world - as much as two feet in a single day. An important product, algin (or alginic acid), is found in the plant's cell walls. As thickeners, coagulants, and emulsifiers, algin derivatives appear on the labels of soups, sauces, and mayonnaise; they also control the viscosity of salad dressings and fruit syrups. However, by far the largest amounts are used in the manufacture of ice cream to prevent crystals from forming and to keep the fat from separating. All together, chemicals derived from algae smooth or thicken hundreds of preparations ranging from cream-cheese dips to toothpaste!

It appears that the time is fast approaching when harvesting ocean crops will be common practice, and in the years to come we may even find our ocean farmers actually living in communities under the sea! The thought of huge domes covering human cities in deep waters sounds like science fiction to us today. But do not forget that many of Jules Verne's seemingly impossible ideas in Twenty Thousand Leagues Under the Sea and other novels have actually become realities.

Thinking It Over

Name three resources available from the sea _____

Studying the Passage

(1) Find the Main Idea: Choose One.

- (a) Many of Jules Verne's predictions are coming true.
- (b) Important mineral deposits lie beneath the floor of the sea.

- (c) Fish farms will increase the world's food supply.
- (d) Man is finding new ways to develop the resources of the sea.

(2) Find the Facts: Mark each of these true or false:

- (a) Echo-soundings are used to carry men into deep areas of the sea. (a) _____
- (b) A recent idea in Japan is the farming of shrimp. (b) _____
- (c) Giant kelp can grow as fast as two feet a day (c) _____
- (d) The main consumers of seaweed are the Japanese. (d) _____
- (e) Ice cream manufacturers use chemicals derived from a red seaweed called laver. (e) _____
- (f) "Farming" the sea includes taking organisms from one area and replanting them in another spot. (f) _____
- (g) Americans are planting kelp as a crop. (g) _____
- (h) Yugoslavian scientists have been fertilizing the waters of shallow bays to increase the yield of oysters. (h) _____

(3) Find the Order: Put the following in the order in which they appear in the passage:

- (a) Sea water itself is a great resource. _____
- (b) One method is to increase the nutrients in an area. _____
- (c) In the years to come major efforts will be directed toward developing methods for extracting this wealth. _____
- (d) Huge domes may one day house underwater cities. _____
- (e) Man has always eaten organisms from the sea. _____
- (f) Little direct use is made of the plants that grow in the sea. _____
- (g) Mechanical reapers are used to harvest giant kelp. _____
- (h) Agriculture and industry require ever-increasing quantities of water. _____

- (4) Go Beyond the Facts: Apparently, a problem now preventing us from using sea water for irrigation is (choose one):
- (a) The process of removing the salt is expensive.
 - (b) There is not enough sea water available.
 - (c) No process to remove the salt has been discovered.
 - (d) There is not enough demand for fresh water.
- (5) Determine the Writer's Style and Technique: Choose one.
- (a) Compares two processes.
 - (b) Uses general statements and a few examples.
 - (c) Supplies many specific details and facts.
 - (d) Describes causes and effects.
- (6) Words and Their Meanings: Find the underlined word in the passage which fits each of these definitions. The first definition fits two words.
- (a) Decreasing, becoming smaller
 - (b) Belonging to a class of items in steady demand by consumers, such as coffee, tea, flour, or salt.
 - (c) Discouragingly, forbiddingly
 - (d) Chemical agents which cause particles to remain evenly distributed throughout a liquid
 - (e) To increase or add to in amount, degree, or size
 - (f) Thickness or stickiness of a liquid; resistance to flowing or being poured
 - (g) Cultivation; the breeding of animals or raising of plants
 - (h) A flattened fish which swims on its side, resembling and related to the flounder

APPENDIX B-2

Please read each question or statement and mark the response closest to your opinion.

1. Rate the following topics according to their importance to you as an individual. Use a 10 point scale with 1 the least important and 10 the most important.

____ NATIONAL PARK SYSTEM

____ SEA NUTRIENTS

____ LEGALIZED GAMBLING

____ ORANGE COUNTY SEWER
SYSTEM

____ SYNTHETIC NUTRIENTS

____ FOREIGN AID

2. Oceanography is irrelevant to the Health Sciences.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
STRONGLY DISAGREE			DISAGREE			UNDECIDED			AGREE			STRONGLY AGREE		

3. Courses in Oceanography should be required for all Nutrition majors.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
STRONGLY DISAGREE			DISAGREE			UNDECIDED			AGREE			STRONGLY AGREE		

4. If the university offered a free seminar on Oceanography and nutrition you would:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
DEF. NOT ATTEND			PROB. NOT ATTEND			UNDECIDED			PROB. ATTEND			DEF. ATTEND		

5. The relationship between your major and nutrition is:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
VERY WEAK		WEAK		NEUTRAL		STRONG		VERY STRONG						

APPENDIX C

Please rate each of the following categories by marking the appropriate choice on the scales provided.

1. Estimate your level of interest in the topic of the reading:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
VERY LOW			LOW			MODERATE			HIGH			VERY HIGH		

2. The author's competence in the field discussed appears to be:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
VERY LOW			LOW			MODERATE			HIGH			VERY HIGH		

3. Do you think the author is trustworthy?

-----	-----	-----	-----	-----
DEFINITELY	PROBABLY	UNDECIDED	PROBABLY	DEFINITELY
NOT	NOT			

4. Estimate the level of difficulty of this reading and test:

-----	-----	-----	-----	-----
VERY LOW	LOW	MODERATE	HIGH	VERY HIGH

5. Estimate the amount of effort you exerted during this test:

-----	-----	-----	-----	-----
VERY LOW	LOW	MODERATE	HIGH	VERY HIGH

6. How nervous are you at the present time?

-----	-----	-----	-----	-----
VERY RELAXED	RELAXED	MODERATE	NERVOUS	VERY NERVOUS

APPENDIX D

DISTRACTION	TASK	
	SIMPLE	COMPLEX
Meaningful	Meaningful distraction increases the complexity of the simple task enough to significantly increase anxiety levels. This results in extra motivation and a consequential increase in task performance.	Persuasion and performance are decreased from excessive complexity and anxiety. Results are not significantly lower than for the complex meaningful group because the anxiety threshold of motivation has already been superceded.
Non-meaningful	Low complexity is not significantly increased with a nonmeaningful distraction. Performance is, therefore, the same as in the control.	Persuasion and performance are thwarted. The extra anxiety of even a nonmeaningful distraction is sufficient to overload the subject and produce negative effects.
Control	Low complexity produces little anxiety, thus, little extra motivation is created.	Complex message and tasks create enough anxiety to enhance motivation. Without distraction there is not, however, enough complexity/anxiety to boomerang this effect.

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